

ABSTRACT OF THE DISCLOSURE

Power quality detection, monitoring, reporting, recording and communication in a revenue accuracy electrical power meter is disclosed. Transient events are detected by monitoring the wave shape of the electrical power and comparing deviations to a known threshold. Sags and Swells are detected by computing root mean square value over a rolling window and comparing the computed value with a known threshold. Harmonic frequencies and symmetrical components are quantified by a known algorithm and compared with a known threshold. Incoming waveforms are stored to memory. All recorded and computed data is moved to non-volatile storage via direct memory access transfer in the event that a power quality event jeopardizes the operating power of the meter. Further, the meter provides a power supply utilizing high and low capacitive storage banks to supply sufficient energy to survive short duration power quality events which jeopardize the meter's operating power.